

OF INTEREST TO FARMERS

WRITER SAYS EVERY AGRICULTURIST A BACTERIOLOGIST.

Facts That Should be Studied by Harney
County People Who Till the Soil
Hints That Bring Success

A knowledge of bacteria in their relation to man, has been confined largely to scientists and to the medical profession who have dealt with the pathogenic or disease producing varieties, and the public is ever ready to accord them the highest tributes of praise for what has been and is now being done to alleviate the suffering of both man and beast by controlling the organisms which are the specific cause of disease.

Modern agriculturists should possess a better understanding of bacteria and their relations than the physician, because not only does he have to do with those which produce disease among his herds and flocks, but with all those non-disease producing varieties which are the foundation of agriculture. Their presence in the soil is absolutely essential in the production of plant food by decomposing all organic matter and reducing it to more simple elements that may be absorbed by plants in a higher order for their nourishment.

It is an established fact that bacteria, which are sometimes called germs, microbes, microorganisms, etc., belong to the plant kingdom and are the lowest form of plants, being unicellular and of microscopic dimensions, their size averaging about three twenty five thousandths of an inch. Each plant under favorable conditions multiplies by dividing it in two every hour, and also produce spores of seeds which are very resistant to the elements of nature.

For the higher order they require moisture to induce their growth. Each variety of these plants prefer and grow best in certain materials and in consuming this as food, they excrete and convert it into chemical substances peculiar to their kind, called humus, which are usually in the form of more simple elements before they began their activities.

After some varieties of bacteria have consumed a part of or all the materials which favors their growth, other varieties begin their activities by using as food the remains of the varieties which preceded them. As an illustration, fresh cider contains a certain amount of saccharine matter which yeast plants find and use for their natural food soon convert it into alcohol by splitting up the sugar and liberating carbonic acid gas. As soon as alcohol is formed, another variety of germs, the acetic acid ferments, use as food the alcohol thus provided for them by the yeasts, then their products, in the presence of air, are converted into acetic acid, or vinegar. Thus it is with all organic matter; here is a constant transformation through the power of bacteria which are factors in reducing organic matter to the power of self decomposition.

form until the introduction of some other variety of micro-organisms that unlock it through the action of their chemical products.

Barnyard manure is usually looked upon as a nuisance, yet it contains a high percentage of available plant food and the mass of bacteria of different varieties. Any soil receiving a coat of manure is not only benefited by the plant food which the manure contains, but it becomes inoculated with great masses of bacteria which are very important in assisting the decomposition of organic matter in the soil.

Since it has been known that nitrogen is one of the essential plant foods, and the most expensive, when applied in the form of a commercial fertilizer, efforts have been made to find some means accumulating it from the atmosphere, which contains a large amount, through organisms that grow upon the roots of leguminous plants as parasites. These efforts have been successful that now pure cultures of the nitrifying germs are artificially grown and sold for the purpose of inoculating the soil.

Another means of accomplishing the same end is by taking the superficial soil from fields upon which the legumes have been grown, scattering it upon the fields supposed to be devoid of nitrifying germs, thus inoculating them with the desired varieties.

While this last method may be good, there is an element of uncertainty about it.

The agriculturist should bear in mind that all well rotted manure contains these desirable varieties of germs in abundance and that spreading it upon the fields which are intended for growing the leguminous plants is a simple and inexpensive way of inoculating the soil with the desired germs. Poultry droppings and as a means of carrying nitrifying germs to the soil. The manure heap is the farmer's chemical and bacteriological laboratory, from whence he can obtain the most valuable chemicals and organisms to assist plant growth.

Manure has an alkaline reaction which favors the growth of the nitrifying bacilli. As considerable of our soil is acid, the application of manure not only inoculates the soil with nitrifying germs, but neutralizes it to a certain extent at the same time.

Sowing clover, or inoculating the soil with nitrifying germs when the soil is acid is useless, as neither clover nor the bacilli will grow in the presence of acid. He must then resort to neutralizing the soil so that both plants may grow. This may be accomplished by applying to the field dry slaked lime either before, or at the time of sowing the seed. To those who desire to prepare their own cultures of nitrifying germs for clover, take: Water, 1 liter; biphosphate of Potash, 1 gram; Magnesium sulphate, 1-10 gram; Glucose (powdered), 15 grams; Iron sulphate, 5 milligrams; Manganese sulphate, 5 milligrams; Sodium Chloride, 1 centigram.

Place these in a large bottle, or flask, using a wad of cotton batting instead of cork, then place the container in a steam cooker, or deep tea kettle, and boil one hour for three successive days. This will sterilize the material which will then be ready for planting the germs; then secure some nodules from the roots of clover plants, clean thoroughly before removing them from the roots, dip them into a weak solution of bichloride of mercury, (one part to 100 of water) for five minutes, rinse well in clean water (preferably boiled water) then by the aid of small tweezers remove the nodules from the roots, and then after crushing, place them in the bottle of culture medium; after a day or so the liquid will become turbid by the growth of the germs. Allow this growth to continue for a couple of days longer, and there will be billions of germs which may be transferred to the clover seed by sprinkling the liquid on a pile of soil and stirring at the same time, heaving the wetting of each seed.

After three days has dried it may (Continued on page four.)

WOODS FULL LAND HUNTERS

TIMBER CLAIMS BEING DILIGENTLY SOUGHT IN OREGON.

Settler Who Has Not Complied With
Requirements Up Against Contest -
Many Wives Want Claims.

Timber claims have become so valuable that the woods of Oregon are even now full of land hunters, although the trees are dripping with cold rain and the creeks are bank full in all directions. Men and women, and quite frequently women alone, may be met traveling through the forests, seeking out claims whose owners are absent, in order to file contests for non-compliance with the homestead laws. These laws compel the entryman to reside on the homestead, and where the claims are simply taken up for speculation, Uncle Sam loses no time in ousting the citizen who remains away from the claim for a period longer than six months.

That many of these abandoned claims are found, is proven by the number of contests now being initiated in the various United States Land Offices of the state. Little cabins, built of rough boards, with the "chinks" between the boards wide enough to shake hands through are not uncommon, and the owner of such a cabin is usually a hundred miles or more away, where the comforts of life can be obtained more readily and where it is not so lonesome as it is in the deep and silent Oregon forest. The new comer has good ground for a contest, however, and a photograph of such a cabin, introduced to the land officers has more convincing qualities than a score of affidavits setting forth the honest intentions of the original entryman.

When it is known that the timber on a given 160 acres is worth as much as \$10,000 it can be realized how eagerly such a claim will be seized by men or women who had hardly hoped to possess the sum \$10,000 in this life. The cost of obtaining title is small in comparison to the ultimate value of the land, and even should the entryman and his family reside on the place the required five years, they have been amply repaid for their toil and patience in the possession of a valuable home.—Telegraph.

AFTER OUTSIDE SHEEPMAN.

Pie Anderson, a millionaire sheep man of Nevada is soon to be indicted for bringing his flocks into Oregon without first giving due notice. Dr. W. H. Lytle, state sheep inspector, passed through Baker City Saturday on his return to Pendleton from Malheur county, where he had been to look into the matter and request the district attorney to file an indictment.

Anderson was caught over on the Oregon side with five bands of sheep, C. J. Dodson, a federal inspector, is the witness, but it is believed by Lytle and the other officials that since he was caught "with the goods" as it were, he will not stand trial. They expect him to come in, plead guilty and pay his fine.

Since he had five bands over the line an effort will be made to make a separate offence for each band, thus swelling the total amount of fine he will be compelled to pay.

Bringing sheep into the state without having given the required notice is the same ground upon which the Washington men were indicted a few months ago. This last action would seem to indicate that Oregon officials do not propose to show any partiality.—Baker City Democrat.

MALHEUR COUNTY OIL.

The report came to town a couple of weeks ago that a small flow of oil had been struck in the well in Sand Hollow. In a few days a stronger flow was reported. The drillers are going through a hard, solid rock which they believe is the capping over the oil proper, and the oil which is coming is simply what is being forced up through the fissures for perhaps hundreds of feet. As it would require

enormous pressure to force even the small quantity in sight up through so solid a foundation, the men in charge feel sure that they will soon encounter a strong flow. It is not possible to find out just how deep the well is at present, as the men in charge are not telling near all they know; but what seems to be reliable information places the depth at about a thousand feet.

A few days ago a good pocket of gas was encountered, and it is possible that they may find it in large quantities soon.

At a depth of about 450 feet a good flow of artesian water was encountered, enough to irrigate ten or more acres of land from the one well. Oil aside, this one item is of vast importance to this county. There are many thousand acres of land which could be utilized if water could be procured for it. A good flow of artesian water a 450 feet solves the problem.—Vale Gazette.

How Coffee Came Into Use.

Near the middle of the fifteenth century a poor Arab was traveling through Abyssinia, and, finding himself weary and weak from fatigue, he stopped near a grove; then, being in want of fuel to cook his rice, he cut down a tree which happened to be covered with dead berries. His meal being cooked and eaten, the traveler discovered that the half burned berries were fragrant. He collected a number of them, and, on crushing them with a stone, he found that their aroma increased to a great extent. While wondering at this he accidentally let fall the substance into the can which contained his scanty supply of water—lo! what a miracle. The nearly putrid water was almost instantly purified. He raised it to his lips; it was fresh, agreeable, and in a moment the traveler had so far recovered his strength and energy as to be able to resume his journey. The lucky Arab gathered as many berries as he could, and having arrived at Aden, in Arabia, he informed the mufti of his discovery. That worthy divine was an inveterate opium smoker, and had suffered for years from the influence of that poisonous drug. He tried an infusion of the roasted berries and was so delighted at the recovery of his own vigor that in gratitude to the tree he called it kahwah, which in Arab signifies "force".—Dundee (Scotland) Advertiser.

LOCAL AND PERSONAL.

James Gilbert was down from Harney Monday.

Mrs. E. E. Purrington has been confined to her home from sickness for several days.

J. C. Freeman was over from the Warm springs the first of the week looking after business affairs.

One of the worst storms of the season visited this section Sunday night. It rained, snowed and the wind blew some.

The local Circle Women of Woodcraft will give a masked ball on Feb. 14 at Locher's hall. Particulars will be given publicity later.

Ora Hamilton, who has been attending school at the Agricultural College, arrived home last Saturday night. He will not return during this term.

The annual congregational business meeting of the Burns Presbyterian church will be held at the church on Friday night, Jan. 10th at 7:30. All the members of the church are urged to be present and the friends of the church are most cordially invited. The object of the meeting is to transact the business for 1908.

DENIES TOWNSITE PURCHASE

MOUNT HOOD ROAD DOESN'T OWN DESCHUTES TOWN.

Right of Way Department Says That Stories
Have Tendency to Increase Difficulties
Buying Property Along Route.

The Portland Journal says: There is growing doubt that the Mount Hood Railway company will build any more railroad than it has already about completed between Fairview junction and Bull Run. This line will serve the purpose of hauling its big power plant to the Bull Run power site, and that is said to have been the principal purpose at the beginning in starting the survey for a railroad from Portland toward Mount Hood.

"This company never has approached anyone to negotiate a purchase of any irrigation or water power properties on the upper Deschutes river, and no one representing this company has ever proposed such an idea to the Laidlaw people, or anyone else," said R. C. Linney, head of the right of way department. "There is absolutely nothing in the published story of this company's operations east of the mountains.

"The only effect of such stories has been to increase the difficulties in the way of our efforts to get right of way. We came into this railroad project fairly and openly, and did not attempt any underhanded method, but came forward with a straight business proposition, offering to buy and pay a fair price for rights of way that are needed. We have been held up for outrageous prices, and in some instances entirely blocked. The route of the railroad today is very much in doubt.

Regarding an alleged tunnel under Mount Tabor, it is said that the company does not yet even know which side of the mountain the route will pass. Surveys and portions of right of way have been secured on routes running on both sides.

The main purpose of the company from the beginning has been to erect a very large power plant at Bull Run, and develop electric power for the sale of light and power in Portland. The railroad was a subsidiary project. The company has nearly completed a road connecting with the O. W. P. railway and O. R. & N. at Fairview, and over this line will haul its power plant machinery out to Bull Run within the next 60 days, and go forward with construction of the great power plant planned for that site.

Whether any more of the proposed railroad system is built remains to be seen, it is said by those who are closely watching the obstructed progress of its affairs.

NEW FORMS FOR LAND APPLICATIONS.

Commissioner Ballinger of the general land office has sent the following notice to local land offices:

New forms of applications for Homestead Entry, Soldiers Additional Homestead Entry, Desert Land Entry, Land for Timber or Stone Sworn Statements, Timber or Stone Final Proofs, and Yearly Proof in Desert Land cases, have been adopted, and on and after March 1, 1908, no entries will be allowed in the class of cases above mentioned unless executed upon the new official forms, or upon forms which are exact duplicates thereof, both as to wording, arrangement, and size. Each of said forms is a combination of several forms and affidavits formerly required to be filed in such cases, and the use thereof will result in a saving of time, labor, and expensive to the local land officers, proof-taking officers, and claimants.

Alex McIntosh of Paulina passed through Prineville Saturday on his way to Portland to spend the holidays.—Prineville Journal.

Tom Allen left Wednesday for the P. Ranch to look after his duties there after spending the holiday season here. He was accompanied out by Mrs. Allen who will visit out there for a few weeks.

If you intend to build, see Adm. George. He will furnish you plans, specifications, doors, windows and hardware for about half what windows formerly cost. Address him at Lawen.

It comes up in a collapsible tube with a nozzle, easy to apply to the soreness and inflammation, for any form of Piles; it soothes and heals, relieves the pain, itching and burning. Man Zan Pile Remedy. Price 50 cts. Guarantee. Sold by The Welcome Pharmacy., Burns, Ore. Fred Haines., Harney, Ore.

Job printing—The Times-Herald

NO TRESPASSING.

Hunting is forbidden upon my place adjoining Burns. Trespassers will be prosecuted.

C. H. VOEGTLY.

Mothers with little children need no longer fear croup, colds or whooping cough. Bees Laxative Cough Syrup tastes good. It works off the cold through the bowels, clears the head. Guaranteed. Sold by The Welcome Pharmacy., Burns, Ore. Fred Haines., Harney, Ore.

NO TRESPASSING.

Notice is hereby given that hunting and shooting upon the enclosed lands of the American Land & Live Stock Co. is strictly forbidden. Any person or persons found hunting or trespassing will be prosecuted to the full extent of the law.

E. B. HILL,
Ranch Manager.

NOTICE

Being unable to give our personal attention to the collection of the accounts due us, the same have been placed with Mr. C. H. Leonard. A year having elapsed since the dissolution of our partnership a prompt settlement of the same is requested.

MARSDEN & GRAY.

Religious Services.

First Church Christ Scientist 11 a. m. Sunday. Evening service 7:30. Wednesday evening meeting at 7:30. Sunday school 10 a. m. Meetings are held in McMillen's Studio.

Rev. A. J. Irwin will preach at Harney the 2nd Sunday of each month at 11 a. m. and 7:30 p. m. Sabbath school every sabbath at 2 p. m.

The Harney Sunday school meets at 2 o'clock each Sunday and a cordial invitation is extended to all who can attend to meet with us.

At the Presbyterian church Burns, Rev. A. J. Irwin pastor. Devine services the third and fourth Sundays of each month at 11 a. m., and 7:30 p. m. Sabbath school at 10 a. m. every Sabbath morning.

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